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**(12) United States Patent
Tabuteau****(10) Patent No.: US 9,511,081 B2****(45) Date of Patent: Dec. 6, 2016****(54) OSTEOCLAST INHIBITORS FOR KNEE
CONDITIONS****(71) Applicant: ANTECIP BIOVENTURES II LLC,**
New York, NY (US)**(72) Inventor: Herriot Tabuteau,** New York, NY (US)**(73) Assignee: Antecip Bioventures II, LLC,** New
York, NY (US)**(*) Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.**(21) Appl. No.: 14/967,234****(22) Filed: Dec. 11, 2015****(65) Prior Publication Data**

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Related U.S. Application Data**(60)** Division of application No. 14/605,822, filed on Jan.
26, 2015, now Pat. No. 9,216,153, which is a
continuation of application No. 14/604,524, filed on
Jan. 23, 2015, now Pat. No. 9,211,257, which is a
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May 28, 2014, now Pat. No. 8,835,650, said
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now Pat. No. 9,034,889, which is a continuation of
application No. 14/063,979, filed on Oct. 25, 2013,
now Pat. No. 8,802,658, which is a continuation of
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61/767,676, filed on Feb. 21, 2013, provisional
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on Jun. 1, 2012, provisional application No.
61/647,478, filed on May 15, 2012, provisional
application No. 61/646,538, filed on May 14, 2012.**(51) Int. Cl.****A61K 31/66** (2006.01)**A61K 31/675** (2006.01)**A61K 31/663** (2006.01)**A61K 45/06** (2006.01)**A61K 9/00** (2006.01)**A61K 9/20** (2006.01)**(52) U.S. Cl.**CPC **A61K 31/675** (2013.01); **A61K 9/0053**(2013.01); **A61K 9/2004** (2013.01); **A61K**
31/663 (2013.01); **A61K 45/06** (2013.01)**(58) Field of Classification Search**USPC 514/108
See application file for complete search history.**(56) References Cited**

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C. Cullman; Brent Johnson**(57) ABSTRACT**

Oral dosage forms of osteoclast inhibitors, such as nitrogen-containing bisphosphonates, can be used to treat or alleviate pain or related conditions.

30 Claims, 14 Drawing Sheets